

Applicant(s): Joachim STUMPE et al.
Atty. Docket: 31583-226294 RK

Prior to examination on the merits, please amend the claims of the international application as follows.

1. (Currently Amended) Method for three-dimensionally determining the refractive index of transparent or partially transparent layers, wherein the layer {1} is irradiated with polarised light at different angles of incidence {5}, and wherein variations in the polarisation of the light are measured and evaluated as the light passes through the layer {1}, characterised in
that the measurement is carried out through an immersion medium {3} which has a higher refractive index than air, and between which the layer {1} is inserted.
2. (Currently Amended) Method according to Claim 1,
characterised in
that the layer {1} is applied to a transparent substrate {2} and is measured on the substrate {2}.
3. (Currently Amended) Method according to Claim 2,
characterised in
that an immersion medium {3} is used with a refractive index which is at least corresponds approximately to a refractive index of the substrate {2}.
4. (Currently Amended) Method according to ~~one of~~ Claims 1 to 3,
characterised in
that the layer {1} is measured in a chamber {6} into which is inserted a liquid immersion medium {3}.

5. (Currently Amended) Method according to ~~one of~~ Claims 1 to 3,
characterised in
that the immersion medium {3} is formed by two solid body
halves between which the layer {1} is inserted.
6. (Currently Amended) Method according to Claim 5,
characterised in
that two hemispheres or hemi-cylinders are used as the
immersion medium {3}.
7. (Currently Amended) Method according to Claim 6,
characterised in
that the two hemispheres or hemi-cylinders are supported by
capillary forces on the layer {1} and the substrate {2}.
8. (Currently Amended) Method according to ~~one of~~ Claims 1 to 7,
characterised in
that the layer {1} is irradiated simultaneously or
consecutively with light of different wavelengths in order to
determine the complex refractive index.
9. (Currently Amended) Method according to ~~one of~~ Claims 1 to 8
for measuring layers for flat screens, optical data storage or
optical wave guides.
10. (Currently Amended) Device for carrying out the method
according to ~~any one of~~ Claims 1 to 9, with a transmission
measuring device for measuring a variation in polarisation as
the polarised light passes through a sample and a rotating
device for the sample,
characterised in
that the device comprises an immersion medium which has a

higher refractive index than air, and a support for the immersion medium {3} is provided and is designed so that the sample can be inserted between the immersion medium {3} and can be rotated in or with the immersion medium {3} relative to a beam axis of the polarised light.

11. (Original) Device according to Claim 10,
characterised in
that the support is a chamber {6} for a liquid immersion
medium {3}, which has inlet and outlet surfaces for the
polarised light.
12. (Currently Amended) Device according to Claim 11,
characterised in
that the chamber {6} is designed in a cylindrical shape and is
connected to the rotating device so that it can be rotated by
means of the rotating device.
13. (Currently Amended) Device according to Claim 10,
characterised in
that the support is designed for receiving and fixing two
solid body halves forming the immersion medium {3} and is
connected to the rotating device.